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10/559,366	02/28/2007	Gottfried Steiner	P/3453-22	3641

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EXAMINER
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BELL, WILLIAM P

ART UNIT	PAPER NUMBER
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1791

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06/02/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,366	<b>Applicant(s)</b> STEINER, GOTTFRIED	
	<b>Examiner</b> WILLIAM P. BELL	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 25 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-9, 11, 14-15, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shepherd (U.S. Patent No. 3,962,399, already of record). Regarding claim 19, Shepherd teaches a process for bonding a solid wood base element (see column 6, lines 8-9) to plastic material (see column 4, line 15) by injection molding (see column 2, line 65) for production of functional elements (see column 1, lines 11-13), wherein the wood base element is inserted into an injection mold (see Figure 6) and, at previously selected sites, plastic material melt is injected and acts on the surface of the wood base element so as to penetrate into existing free spaces (see column 5, lines 51-56, wherein the sprue and nozzle represent previously selected sites for injection; see column 5, line 65 through column 6, line 3 and Figure 6, wherein the plastic contacts the surface of the handle and fills the existing free space formed by groove 26; see column 5, lines 61-65, wherein the injection pressure of 6000-10000 psi would also be sufficient to cause the molten polymer to fill any existing voids or cracks in the wood handle), said process comprising the step of setting process parameters during injection molding (see column 5, lines 56-62) such that the plastic material melt compresses and partially

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deforms the wood base element (see column 6, lines 8-14) to create new space and penetrates into said new space (new space must be formed as the end portion of the handle is compressed; since the plastic melt is under high pressure, it would fill that space).

Regarding claim 2, Shepherd teaches a process wherein at least one embedment at least substantially running in the direction of the wood fibers is formed in the wood base element (see column 6, lines 8-14, wherein the compression of the end portion of the handle occurs in the direction of the wood fibers, since it is the end grain which is exposed on the end portion).

Regarding claim 3, Shepherd teaches a process wherein at least one embedment composed of plastic and at least substantially running perpendicularly to the direction of the wood fibers in the wood base element is formed in the wood base element (see Figure 6, wherein the plastic fills groove 26, which runs perpendicular to the direction of the wood fibers in the handle).

Regarding claim 4, Shepherd teaches a process wherein the plastics-filled indentations are formed at a predetermined site on the wood base element (see column 6, lines 12-14, wherein the indentations are formed on the end portion of the handle and at groove 26).

Regarding claim 5, Shepherd teaches a process wherein the plastics melt is injection molded onto the wood base element in such a way that no injected material visibly protrudes at any outer side (see Figure 6, wherein the plastics melt is contained in the cavity formed by the handle, the tool head and the nozzle).

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Regarding claim 6, Shepherd teaches a process wherein an injection pressure is from 10 bar to 2500 bar (see column 5, lines 61-62, wherein 6,000-10,000 psi equals 414-689 bar).

Regarding claim 7, Shepherd teaches a process wherein a mold cavity pressure is from 50 bar to 1400 bar (see column 5, lines 61-62, wherein 6000-10000 psi equals 414-689 bar; see column 5, lines 62-64).

Regarding claim 8, Shepherd teaches a process wherein the plastic is a thermoplastic (see column 4, line 15).

Regarding claim 9, Shepherd teaches a process wherein the temperature of the plastics melt is from 130° to 400°C (see column 5, line 60, wherein 300° to 600°F equals 149° to 316°C).

Regarding claim 11, Shepherd teaches a process wherein the temperature of the flowable plastic is selected to be room temperature or higher (see column 5, line 60).

Regarding claim 14, Shepherd teaches a process comprising the same steps as the claimed invention, the same materials, and the same processing conditions. Therefore the process taught by Shepherd would be expected to produce the same results, specifically the formation of a depression and/or embedment of 1 mm to 2 or more cm in length.

Regarding claim 15, Shepherd teaches a wood-plastic composite component which is produced by the process of claim 19 (see Figure 7).

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Regarding claim 20, Shepherd teaches a process at least one indentation in the form of an undercut forms on the surface of the wood base element (see Figure 6, wherein groove 26 can be reasonably interpreted as an undercut).

3. Claims 10 and 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith (U.S. Patent No. 3,482,836). Regarding claim 19, Smith teaches a process for bonding a solid wood base element (see 2, line 16) to plastic material (see column 2, line 34) by injection molding (see column 2, line 35) for production of functional elements (see column 1, line 13), wherein the wood base element is inserted into an injection mold (see column 7, lines 34-35) and, at previously selected sites, plastic material melt is injected and acts on the surface of the wood base element (see column 7, lines 35-36), said process comprising the step of setting process parameters during injection molding (see column 7, lines 29-32). While Smith does not explicitly state that the process results in the plastic melt penetrating existing free spaces and compressing the wood base element and deforming it to create new space and penetrate that space, Smith teaches all of the elements of the claimed invention, specifically placing a wood element in an injection mold and injection molding a molten plastic material onto the wood element. Smith further teaches overlapping ranges of plastic melt temperatures (see column 7, line 29 of Smith and page 4, lines 14-15 of the instant application) and injection pressures (see column 7, lines 32 of Smith and page 4, lines 7-9 of the instant application). Applicant recites suitable types of wood as balsa, spruce, oak, beech, and other types with substantially the same property profiles. Smith teaches a wood element made of maple

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or other hardwood, which would include the oak and beech species recited by Applicant. Therefore, the plastic melt in the process taught by Smith inherently penetrates the existing free spaces in the wood element and compresses and deforms the wood element to form new spaces, thereby filling those spaces.

Regarding claim 10, Smith teaches a process wherein the plastic is a reactive material (see column 2, lines 46-49 and column 4, lines 5-6).

Regarding claim 17, Smith teaches a process wherein the plastic is an elastomer (see column 2, line 47).

Regarding claim 18, Smith teaches a process wherein the plastic is a thermoset (see column 4, lines 5-6).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd as applied to claim 1 above. Regarding claim 12, Shepherd is silent regarding the injection time for the plastic, but does teach that solidification of the thermoplastic will occur in as little as 15 seconds (see column 6, lines 27-28). Since solidification of the material will occur in such a short time period, it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected an

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injection time of no more than a few seconds so that the cavity could be completely filled and properly packed before the material solidified.

Regarding claim 13, Shepherd teaches a process wherein the wood element is made from hickory. Hickory has properties like those of oak, in that both are dense hardwoods. It would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the process taught by Shepherd to the manufacture of tools with handles made of other woods such as balsa, spruce, and oak, since there exists only a limited number of wood species and one of skill would know to choose from among those species depending on the property profile needed for a particular application.

### ***Response to Arguments***

6. Applicant's arguments, see page 4, filed 25 February 2009, with respect to the drawings have been fully considered and are persuasive. The objection of 25 November 2008 has been withdrawn. Examiner wishes to thank Applicant for clarifying the status of the drawings relative to the amendments to the specification.

7. Applicant's arguments, see pages 4-5, filed 25 February, with respect to the rejection(s) of claim(s) 1-15, 17, and 18 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of prior art by Shepherd and Smith, as discussed above. Examiner respectfully disagrees with Applicant, however, in the assertion that the plastics material does not



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penetrate into the wooden handle in the injection molding process taught by Shepherd. Rather, Shepherd explicitly teaches that using an injection pressure greater than the compressive strength of the wood results in compression and densifying of the handle (see column 6, lines 8-14). Since wood is inherently a nonhomogeneous material with a fibrous structure, the compressive strength reported by Shepherd must be a composite measurement. As such, individual portions of the wood structure would then a range of intrinsic compressive strengths and therefore some portions of the handle would be compressed more than others, resulting in penetration of the plastic into the handle.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM P. BELL whose telephone number is (571)270-7067. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:30 pm; Alternating Fridays, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wpb

/Richard Crispino/  
Supervisory Patent Examiner, Art Unit 1791